



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,071	01/16/2002	Sreedhar Sannareddy Reddy	P8001	1507
24739	7590	01/04/2005	EXAMINER	
CENTRAL COAST PATENT AGENCY PO BOX 187 AROMAS, CA 95004			CHOW, CHIH CHING	
			ART UNIT	PAPER NUMBER
			2122	

DATE MAILED: 01/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/052,071	REDDY ET AL.
	Examiner Chih-Ching Chow	Art Unit 2122

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 16 January 2002.  
 2a) This action is **FINAL**.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-14 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-14 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 16 January 2002 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
     Paper No(s)/Mail Date 01/16/2002.

4) Interview Summary (PTO-413)  
     Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

## DETAILED ACTION

1. This action is responsive to the application filed on January 16, 2002.
2. The priority date considered for this application is July 26, 2001, which is the filing date of a foreign application, Indian utility provisional patent application No. 721/MUM/2001.
3. Claims 1-14 have been examined.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 5, 838,973 by Theodore R. Carpenter-Smith et al. (hereinafter "Carpenter-Smith").

**CLAIM**

1. A software control interface for creating and editing system views of a business information system using object models shaped to define the system views comprising:
  - (a) a drawing tool for visually representing system views using model elements represented by icons;
  - (b) a first specification language for defining the various elements of a drawing; and
  - (c) a second specification language for defining mapping between drawing icons and objects stored in all object repository of the software system;
  - (d) characterized in that a user operating the drawing tool through a graphical user interface can, by dragging and dropping icons of the drawing tool onto a drawing sheet of the drawing tool, specify abstract models and model extensions expressed in diagrammatic notation transparent to the user and usable by the software system and associated repository.

**Carpenter-Smith**

In Carpenter-Smith, column 5, lines 9-12, "The process or system to be modeled includes requirements. For example, a model for an airline reservation system would include various business requirements that define how the system should work. The Object Technology Visualization (OTV) software tool guides the user through the object modeling process, while capturing the necessary information to build object models", also column 29, lines 63-65, "In summary, the OTV modeling system is an interactive, computer-implemented, real-time software tool that physically transforms an applied object oriented programming (OOP) based system or process into a visual representation." For item (a), see Carpenter-Smith, column 10, lines 35-39, "The link object tool 280, when selected, allows the user to draw lines (drawing tools) connecting certain objects to show a relationship between those connected objects (connectors)." For items (b) and (c), see Carpenter-Smith, column 6, lines 64-67, "When the classes, attributes, behaviors and collaborations have been defined (using a certain specification language), processing continues at step 200 which is initiated by selecting the collaborations process icon 180. Step 200 involves the creation of interaction diagrams that allow the collaborations

between the objects to be evaluated (*mapping between drawing icons and objects*). Specific interactions between objects can be created, modified or deleted at step 200." For item (d), see Carpenter-Smith column 7, lines 24-28, "user-interface windows can be initiated for each of the steps 192 through 206 by selecting the corresponding process icon." Also, see Carpenter-Smith column 14 lines 1-3, "selecting and moving the desired cell, which can be accomplished by clicking on the desired cell and 'dragging' it to a new location." And column 28, lines 48-52, "Drag-It™ is a class library and toolkit that provides for 'drag and drop' graphical interfaces to Visual C++ applications (*a specification language*). It allows symbols to be "dragged" from one view to another. This library of C++ functions handles graphical object placement, text placement, line drawing, drag & drop features, toolbar creation and usage, and all printing options for the two-dimensional object view."

6. Claims 2-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5, 838,973 by Theodore R. Carpenter-Smith et al. (hereinafter "Carpenter-Smith"), in view of U.S. Patent No. 6,684,386 by Donald Baisley (hereinafter "Baisley"), further in view of "Metamodeling in OO" by Hafedh Mili et al. (hereinafter "Mili").

**CLAIM**

2. The software control interface of claim 1 wherein the modeling system is defined according to a meta modeling framework that adheres to a hierarchical tri-level structure of abstraction.

**Carpenter-Smith / Baisley / Mili**

For the feature of claim 1 see claim 1 rejection. Carpenter-Smith teaches all aspects of claim 1, but he does not mention 'meta modeling' and 'tri-level structure' specifically; however, Baisley teaches 'meta modeling' in an analogous prior art. In Baisley's column 1, lines 31-34, "A repository contains groups of metadata called models. A special kind of model, called a metamodel, describes the contents of other models.

Metamodels typically contain classes, associations or references, and datatypes." Mili teaches 'tri-level structure' in an analogous prior art. See Mili, under 'Instruction', item 1), "Exploring the additional modeling constructs that are needed to model information at several levels of abstraction".

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to supplement Carpenter-Smith's disclosure of transforming a system into a visual representation by using meta modeling taught by Baisley, for the purpose of share or reuse information about data (see Baisley, column 1, lines 21-22), and using multiple level abstraction taught by Mili, for the purpose of representing application objects (Mili column 2, end of first paragraph).

3. The software control interface of

For the feature of claim 2 see claim 2

claim 2 wherein the modeling framework includes a system information model, a meta model and a meta meta model.

rejection. See Baisley, column 3, lines 30-35, "'meta-data'" describes data. In a similar fashion, a meta-object is an object that represents 'meta-data'; and, a 'meta-meta-model' means a model that defines an **abstract language** for expressing meta-models. The relationship between a **meta-meta-model** and a meta-model is analogous to the relationship between a meta-model and a model." Also, see Mili, page 106, column 2, 4<sup>th</sup> paragraph, "We could also iterate several times along the same dimension. For example, we can "go meta-meta" along the representation notation/language dimension".

4. The software control interface of claim 3 wherein the language for describing the system information model is UML.

For the feature of claim 3 see claim 3 rejection. Baisley column 1, lines 59-60, "It is important to have a method of conversion that works in the context of UML so as to preserve UML diagrams."

5. The software control interface of claim 3 wherein the language for describing the system information model is XML.

For the feature of claim 3 see claim 3 rejection. XML is a well-known technology for the people in the art, which is designed especially for Web documents.

6. A method for creating and manipulating business system views of a complex software system through user manipulation of visual symbols and connectors stored in an object repository associated with the system, the symbols and connectors represented

See claim 1 and claim 2 (repository part) rejections.

in an interface of a drawing tool comprising steps of:

- (a) providing a first specification language specifying the symbols and connectors of the drawing tool;
- (b) providing a mapping second specification language for mapping drawing elements to repository objects;
- (c) selecting certain symbols and connectors from a palette of the drawing tool, and dropping them in certain order on an open sheet of the drawing tool until a view or view edit is complete; and
- (d) when complete, executing a completed system view for display on a graphical interface of the software system.

7. The method of claim 6 wherein in steps (a) through (d) a hierarchical tri-level meta modeling framework is observed.

8. The method of claim 7 wherein the meta modeling framework includes a system information model at a first level of abstraction, a meta model at a higher level of abstraction and a meta meta model at a highest level of abstraction.

9. An object modeling system for creating, editing, and displaying various views of a business information system comprising:

For the feature of claim 6 see claim 6 rejection. For the rest of the claim 7 feature see claim 2 rejection.

For the feature of claim 7 see claim 7 rejection. For the rest of the claim 7 feature see claim 3 rejection.

See claim 2 and 3 rejections.

(a) an object repository for storing object models and model elements; a drawing tool for visually representing system views using model elements represented by drawing icons associated with the tool;

(b) a first specification language for defining the various elements of a drawing represented by the drawing icons; and,

(c) a second specification language for defining mapping between the drawing icons and model elements stored in the object repository;

(d) characterized in that the system operates according to a tri-level meta modeling framework including a meta meta model functioning as a base model for the instantiation hierarchy of the framework, a meta model formed as an instance of the meta meta model, the meta model defining the structure and semantics for an information system view, and an information system model formed as an instance of the meta model, the information system model describing one or more specific information system views as specified by the meta model.

10. The object modeling system of claim 9 wherein UML, XML, and entity relationship modeling language is supported at the highest level of abstraction.

For the feature of claim 9 see claim 9 rejection. For the rest of the features see claim 4 and 5 rejections.

11. The object modeling system of claim 9 wherein the icons comprise symbols and connectors.

For the feature of claim 9 see claim 9 rejection. For the features about icons, symbols and connectors see claim 1 rejection.

12. The object modeling system of claim 9 wherein the association between the drawing icons and model elements stored in the repository is automated.

For the feature of claim 9 see claim 9 rejection. For the repository part see claim 2 rejection.

13. The object modeling system of claim 9 wherein dragging and dropping drawing icons from a drawing palette into a drawing sheet causes machine readable instruction for building system views in an object oriented way, the instruction code transparent to the user.

For the feature of claim 9 see claim 9 rejection. For rest of the features see claim 5 rejection.

14. The object modeling system of claim 13 wherein the views are customizable and extendable over existing system views by creating new icons and connectors using the drawing tool, specifying them in the drawing and mapping languages and storing the elements in the object repository.

For the feature of claim 13 see claim 13 rejection. For the rest of claim 14 feature see claim 1 rejection.

*Conclusion*

7. The following summarizes the status of the claims:

Claim Rejections - 35 USC § 102: Claim 1

Claim Rejections - 35 USC § 103: Claims 2-14

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

*Patterson, US 2002/0052941 discloses a method for defining and deploying a computer system featuring creating and storing a graphical representation using a graphical editor to drag and drop icons representing computing elements and network elements into a workspace.*

*Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Ching Chow whose telephone number is 571-272-3693. The examiner can normally be reached on 7:00am - 3:30pm.*

*If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.*

*Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).*



ANTONY NGUYEN-BA  
PRIMARY EXAMINER

Chih-Ching Chow  
Examiner  
Art Unit 2122

CC